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PARTICIPATION OF THE UNITED NATIONS IN INTERNATIONAL SPACE YEAR

Note by the Secretariat

Final report of the United Nations in International Space Year

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INTRODUCTION

1. At its forty-fourth session, in its resolution 44/46 of 8 December 1989, the General Assembly endorsed the participation of the United Nations in International Space Year (ISY) 1992, and directed that "... the training and educational capabilities of the United Nations Programme on Space Applications should be utilized to bring about a meaningful role for the United Nations".

2. Because Earth observation from space can provide a better understanding of our planet and its environment, several national and international organizations, including the United Nations, jointly developed and carried out a number of space related activities under the umbrella of ISY.

3. The scope of the activities developed for the participation of the United Nations in ISY (UN-ISY) focused on three main areas: A. Management of the resources of the Earth and its environment; B. Long-term education programmes; and C. Public education.

4. This is the final report on UN-ISY activities including those that have been carried out, are ongoing or are under development. These activities have encouraged all countries, particularly developing countries, not only to participate in the applications of space technology but also to undertake programmes that could contribute to the understanding, management and safeguarding of the environment. Presented below as well as in the annex to the present report are the summaries and the current status of these activities.

SUMMARIES OF ACTIVITIES

A. MANAGEMENT OF THE RESOURCES OF THE EARTH AND ITS ENVIRONMENT

1. United Nations International Training Course on Remote Sensing Applications for Environmental Assessment and Monitoring

5. This training course was co-sponsored and hosted by the Government of the United States of America; it was held in Sioux Falls, South Dakota from 9 September to 4 October 1991.

6. The course focused on developing the practical knowledge and skills of participants in the multidisciplinary use of data sets, including remotely sensed data, for environmental study and resources management. The course provided practical training in the processing and applications of satellite and other types of spatial data as well as training in the analysis of such data for land processes, using Geographic Information Systems (GIS). Instructions consisted of lectures, demonstrations of processing techniques, hands-on operations of digital data and practical exercises.

7. The course was attended by 23 participants and 2 observers from 25 countries. A detailed report on the course is contained in document A/AC.105/499.

2. United Nations/United States of America International Conference on Satellite Remote Sensing for Resource Management, Environmental Assessment and Global Change Studies: Needs and Applications of Developing Countries

8. This International Conference was organized in cooperation with the Government of the United States of America and was held in Boulder, Colorado from 17 to 20 August 1992.

9. The Conference addressed the roles of satellite remote sensing in resource management environmental assessment and global change studies. The Conference also deliberated on existing data sources, their accessibility and availability, the needs of developing countries and the role of remote sensing in meeting these needs.

10. The Conference was attended by 41 professionals as speakers from 22 countries and three international organizations. One hundred and fifty-five participants also attended the Conference. A detailed report on the Conference is contained in document A/AC.105/527.

3. United Nations/Office of the United Nations Disaster Relief Coordinator (UNDRO)/Economic and Social Commission for Asia and the Pacific (ESCAP) Workshop on the Application of Space Techniques to Combat Natural Disasters

11. This Workshop was organized in cooperation with the Government of the People's Republic of China and was held in Beijing from 23 to 27 September 1991.

12. The Workshop exposed the participants to various aspects of current and future techniques and systems associated with remote sensing, satellite meteorology, satellite communications and satellite positioning systems that could be useful in forecasting, monitoring and mitigating the effects of such natural disasters as severe weather phenomena, flooding, drought, earthquakes and volcanic eruptions. It also addressed the development of databases and the use of GIS to monitor disaster-related activities and problems including desertification, erosion processes and the impact of atmospheric changes.

13. The Workshop was attended by 72 participants from 10 countries of the ESCAP region and 9 national and international organizations with expertise in combating disasters. A detailed report on the Workshop is contained in document A/AC.105/494.

4. Indian Ocean Coastal Zone Monitoring

14. This project is being organized by the Indian Ocean Marine Affairs Cooperation Programme (IOMAC) in cooperation with the United Nations Office for Outer Space Affairs; the execution phase will start in June 1993.

15. The project will focus on the operational applications of remote sensing satellite images for monitoring coastal zone resources and their evolution in response to economic activities and to environmental change, including sealevel changes and global warming, in the Indian Ocean coastal region. Selected sites of particular concern will be studied with respect to economic productivity, ecological stability and biological diversity. The project will strengthen the capabilities of existing regional and national remote sensing and coastal resource management agencies for marine environmental monitoring and will provide case-studies and procedures that can be used by other agencies.

5. Use of data from Maspalomas Station

16. As a follow-up activity to the United Nations/United Nations Development Programme (UNDP)/European Space Agency (ESA) Meeting of Experts on Remote Sensing and Satellite Meteorology Applications to Marine Resources and Coastal Management (Gran Canaria, Spain, 1989), the ESA and the United Nations Programme on Space Applications jointly conducted a survey on the need for remote sensing data, particularly in those countries of Africa that are within the coverage area of ESA's two ground-receiving stations in Maspalomas (Canary Islands), Spain, and Fucino, Italy.

17. The United Nations/ESA assistance aims at making available historical, current and future data from different satellites so that they may be used to support development of programmes in different application projects, particularly irrigation, roads, water resources, forestry and agriculture in these countries. Presently, the beneficiaries of this programme are: Guinea, Morocco, Nigeria and Tunisia. ESA is providing Earth observation data in hard copy prints, films and computer compatible tapes to the scientists in these countries.

18. At the conclusion of these ongoing projects, the scientists concerned will be brought to Frascati, Italy in order that they could present the results of their work as well as undergo necessary training in the use of ERS-1 data in relevant application projects in their countries.

6. The United Nations/International Society for Photogrammetry and Remote Sensing (ISPRS) Workshop on Remote Sensing Data Analysis Methods and Applications

19. The Workshop was organized during the seventeenth ISPRS Congress for the benefit of scientists from developing countries. The Workshop, co-sponsored by ISPRS, was held on 6 and 7 August 1992 in Washington, D.C.

20. The Workshop provided a forum for scientists concerned with algorithms, software systems and hardware development to deliberate on the reduction and analysis of data and their applications. It also fostered communication between developers and users of remote sensing as a tool in social and economic development programmes.

21. Thirteen experts made presentations at this Workshop. One hundred and twenty participants attended the Workshop.

7. The United Nations/International Astronautical Federation (IAF)/Committee on Space Research (COSPAR)/American Institute of Aeronautics and Astronautics (AIAA) Symposium on "Space Technology in the Developing Countries - Making it Happen"

22. This Symposium was co-sponsored by the United Nations Office for Outer Space Affairs, IAF, COSPAR and AIAA, and was held from 28 to 30 August 1992, during the World Space Congress, in Washington, D.C.

23. The Symposium focused on the central themes of (a) Sustainable development of natural resources, and (b) Modernization through communications. The participants reviewed and discussed effective ways in which applications-oriented and user agencies, research and governmental institutions and industry can initiate cooperative ventures to establish fully operational programmes or enterprises.

24. The Symposium was attended by 127 participants from 39 countries; 56 of the participants were from 30 developing countries.

8. Participation in other ISY activities

25. The United Nations participated in and contributed to other international and national ISY activities, including those planned by the Space Agency Forum on International Space Year (SAFISY). Specifically, the United Nations participated in SAFISY IV (Moscow, 1991), SAFISY V (Washington, D.C., 1992), SAFISY's Colloquium on Education and Applications in 1991 and SAFISY Panel of Experts on Education and Applications in 1992.

26. The United Nations will continue to play an active role in the activities of the Space Agency Forum (SAF), the successor to SAFISY.

9. United Nations Workshop on Space Technology for Resource Development and Environmental Management

27. This Workshop was organized in cooperation with the Governments of Ecuador and Japan for the benefit of participants from the Economic Commission for Latin America and the Caribbean (ECLAC) region. It was held from 9 to 13 March 1992 in Quito.

28. The Workshop (a) exposed the participants to the management of natural resources programmes as well as the planning of national development and environment protection using the capabilities of current and future Earth Observation Systems; (b) familiarized the participants with the functions of the newly established CLIRSEN-COTOPAXI satellite receiving station; and (c) provided a forum to discuss and formulate possible regional cooperation programmes that would facilitate the utilization of the capabilities of the station.

29. Sixty experts from 21 Member States and 3 international organizations participated in the Workshop; 44 of these participants represented 18 countries from the ECLAC region. A detailed report of the Workshop is contained in document A/AC.105/525.

10. United Nations Workshop on Space Communications for Development for the Mediterranean and Adjacent Areas

30. This Workshop will be held from 10 to 12 May 1993 in Athens, in cooperation with the Government of Greece. The Workshop will focus on the status and projected directions of the technology with particular emphasis on rural communications for health care delivery, search/rescue missions, disaster relief and overview of satellite broadcasting systems. The Workshop will also familiarize the participants with international satellite network applications for regional and national economic development and shall also address possibilities of regional cooperation.

B. LONG-TERM EDUCATION PROGRAMME

1. Centres for space science and technology education

31. At its forty-fifth session, in its resolution 45/72 of 11 December 1990, the General Assembly endorsed the recommendation of the Committee on the Peaceful Uses of Outer Space that "the United Nations should lead, with the active support of its specialized agencies and other international organizations, an international effort to establish regional centres for space science and technology education in existing national/regional educational institutions in the developing countries".

32. The centres will develop, through in-depth education, indigenous capabilities for research and applications in remote sensing technology, satellite meteorology, GIS and data management as part of the essential tools for environmental assessment and natural resources management; such steps are necessary in order to ensure sustainable development and build the necessary capacities for addressing Agenda 21.

33. An evaluation mission to the ECLAC region was conducted in May 1992; the report of the mission is being circulated. Corresponding evaluation missions to the Economic Commission for Africa and the Economic and Social Commission

for Western Asia regions are planned for the first quarter of 1993. Each of these missions should provide an accurate and informative report that could assist in the selection of the host country/institution(s) for each regional centre.

34. The different stages of development, todate, regarding the establishment of these centres are contained in document A/AC.105/534.

2. Second United Nations Training Course on Remote Sensing Education for Educators

35. This training course was organized in cooperation with the Government of Sweden represented by the Swedish Agency for International Technical and Economic Cooperation (BITS). It was held in Stockholm and Kiruna from 11 May to 12 June 1992.

36. The course focused on developing and enhancing the practical knowledge and skills of the participants in remote sensing technology, particularly in the field of natural resource management and environmental assessment. The course equipped the participants with the ability to introduce elements of the technology in the academic curricula in their respective universities and institutions.

37. Twenty-seven educators from universities and colleges from 23 countries of Africa, South-East Asia and Latin America participated in this course. The report on the training course is contained in document A/AC.105/526.

3. Mission to Planet Earth and Space Education booklets

38. These two booklets are being combined into one booklet titled Space Science and Technology, Development and Environment. It is in the final stage of preparation.

39. The booklet will provide the public with general information on space technology and its roles in social and economic development programmes, and its potential in safeguarding the environment. It also aims at encouraging educators and policy-makers to become more active in promoting space science and technology education as an integral part of educational programmes at the secondary and university levels.

4. Bridging the Information Gap in Space Science and Technology Programme

40. The objectives of this activity are to evolve a mechanism for the collection and distribution of a wide variety of literature on space science and technology, particularly for the benefit of institutions in the developing countries, and to seek the support of publishing houses, libraries and

scientific information centres for such a programme. This activity will commence in the immediate future.

5. United Nations Regional Conference on Space Science and Technology for Sustainable Development (Asia-Pacific)

41. This Conference will be held in Bandung, Indonesia, from 17 to 21 May 1993 in cooperation with the Government of Indonesia. The Conference will review the state of the art of space science and technology and shall, in line with Agenda 21, examine those space-related activities that can support sustainable development in the ESCAP region. The Conference will identify and delineate cooperation programmes for the countries of the region, promote cooperation among scientists, provide a forum for communication among young scientists in the region and provide an opportunity for Member States to be more familiar with the planned Centre for Space Science and Technology Education in the region, and their obligation and responsibility to the Centre.

6. United Nations Regional Conference on Africa's Environmental and Natural Resources Information and Management Needs

42. This Conference is to be held in October 1993 in cooperation with ESA. The Conference is intended to bring together country representatives at the highest level. These participants will develop and evaluate plans on space science and technology development and its applications particularly those dealing with Earth Observation Systems which could address Africa's resource management needs, including the safeguarding of its environment and the promotion of its social and economic development. The Conference will also review (a) the recommendations of the United Nations Conference on Environment and Development (UNCED) held in Rio de Janeiro, Brazil, in June 1992 and the implementation of its "Agenda 21" in Africa, (b) the roles of the Centre for Space Science and Technology Education in developing indigenous capability in the region, and (c) the need of all Member States in the region to support the Centre and its operation.

C. PUBLIC EDUCATION

1. Universariums

43. As educational institutions designed for the general public, planetariums can make important contributions to the study and appreciation of the universe around us, particularly in urban society where residents are increasingly cut off from a clear view of the night sky. Such institutions currently exist in most industrialized countries. In order to generate public interest in and encourage the establishment of planetariums as centres for culture and education in the developing countries, a guidebook titled Planetarium: A Challenge for Education was published and distributed to the international space community.

2. National essay contest

44. The National Essay Contest, at the high school level, is aimed at enhancing the interest and understanding of the youth of the world in space science and technology and its applications. The theme of the essay was "My vision of outer space and the promise it holds for my country and mankind".

45. The United Nations received 33 entries from 33 countries, which were subsequently evaluated by members of the Editorial Board established for this event. Ten of these were selected by the Board as the most meritorious essays. A booklet containing these essays is being published.

3. Telecast and special videos

46. This project lacks needed funds; efforts are still in progress to effect its implementation.

4. Exhibition

47. There was a broad interest in organizing an exhibition on "The Home Planet" at the United Nations Headquarters to mark ISY. However, the plan for the exhibition was suspended due to insufficient financial support.

ANNEX

United Nations participation in International Space Year 1992:
Status of activities as of 24 December 1992

UN-ISY activity #	Short title	Co-sponsors and institution participating with the United Nations	Location and date	Objective(s) and status
A.1.	International training course	USA	Sioux Falls, South Dakota, 9 September-4 October 1991	Focused on the multidisciplinary use of global data sets for environmental study and resources management; 23 participants and 2 observers from 25 countries attended.
A.2.	International conference/ workshop	USA	Boulder, Colorado, 17-21 August 1992	Discussed the role of satellite remote sensing in resource management, environmental assessment and global change studies in the developing countries; 4 professionals made presentations and 155 participants attended.
A.3.	Workshop on natural disasters	China/ESCAP/ UNDRO/UNESCO	Beijing, 23-27 September 1991	Addressed current and future satellite technology and systems that could be useful in forecasting, monitoring and mitigating the effects of natural disasters; 72 participants attended.
A.4.	Coastal zone monitoring	IOMAC/UNDP	Indian Ocean region, 1990-1993	Project design stage
A.5.	Acquisition and transfer of remote sensing data, ESA	African countries covered by ESA stations	In four African countries; from 1992	Project in progress. Satellite data delivered to Guinea, Morocco, Nigeria and Tunisia.
A.6.	ISPRS Congress Workshop on Data Analysis Systems and Applications	ISPRS, 6-7 August 1992	Washington, D.C., 6-7 August 1992	Addressed the specific problems of data analysis methods and related applications. 13 experts made presentations.

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UN-ISY activity #	Short title	Co-sponsors and institution participating with the United Nations	Location and date	Objective(s) and status
A.7.	Space Congress Workshop "Space Technology in Developing Countries - Making it Happen"	COSPAR/IAF/ AIAA	Washington, D.C., 28-30 August 1992	A total of 127 participants discussed how developing countries could initiate cooperative ventures in space applications to sustainable development or communications. The workshop brought together high-level individuals from governmental and research institutions with their counterparts in the space industry.
A.8.	Other ISY activities	SAFISY	Various activities in 1990-1992 period	Participating in SAFISY meetings (SAFISY IV and V) to strengthen cooperation in global activities.
A.9.	Regional Workshop on Space Technology for Resource Development and Environmental Management	Ecuador/Japan	Quito, 9-13 March 1992	Addressed the capabilities of the current and future Earth Observation Systems for the protection of the environment and for impact assessment of human activities; 60 experts from 21 Member States and 3 international organizations attended.
A.10.	International Workshop on Space Communications for Development	Greece	Athens, 10-12 May 1993	Focus on the status and projected direction of space communications technology with emphasis on rural health care delivery, educational broadcasting system, fixed and mobile communication systems, etc. Consultations with Greece in progress.

UN-ISY activity #	Short title	Co-sponsors and institution participating with the United Nations	Location and date	Objective(s) and status
B.1.	Centres for space science and technology education	Member States, regional commissions and other United Nations bodies	Ongoing	The evaluation mission to the ECLAC region and the report of the mission have been completed; the selection process of the Centre's host country is under way. Plans and the corresponding scheduling for evaluation missions to the ECA, ESCAP and ESCWA regions are also under way.
B.2.	Second United Nations International Training Course on Remote Sensing Education for Educators	Sweden	Stockholm, 11 May-12 June 1992	Aimed at developing the practical knowledge and skills of educators from developing countries in remote sensing technology; 27 participants attended.
B.3.	Mission to Planet Earth and Space Education booklets	DARA/NASA/ESA/ WMO/NASDA/USA/ COSTED(ICSU)	New York, 1992	These two booklets are being combined into one booklet titled Space Science, Technology, Development and Environment. It is in the final stage of preparation.
B.4.	Bridging the Information Gap	ICTP	New York, 1992	Redefined as a project; to be completed with information being provided by institutions in the developing countries rescheduled for 1993.
B.5.	Regional Conference on Space Technology	Indonesia	Bandung, 17-21 May 1993	Review the state of the art of space science and technology in line with "Agenda 21". Scope and programme of conference already defined. Invitations have been extended for papers.

UN-ISY activity #	Short title	Co-sponsors and institution participating with the United Nations	Location and date	Objective(s) and status
B.6.	Conference on Africa's Environmental and Natural Resources Information and Management Needs	ESA	Location: negotiation in progress with host country, October 1993	Scope of Conference already defined. Programme under preparation. Co-sponsorship being solicited.
C.1.	Universariums and observation of space objects	Great Lakes Planetarium Associations and Rockwell Space Operation Co.	New York, June 1992	A guidebook titled Planetarium: A Challenge for Educators was published and distributed to the international space community. The guidebook generates awareness to provide assistance in the establishment of planetarium as indispensable centres for culture and education in the field of space science.
C.2.	National essay contest	Member States	New York, November 1992	Aimed at enhancing the world-wide youth's interest and understanding of space science and technology and its application; 33 national essays were received. A booklet will be published containing the text of the 10 most meritorious essays.
C.3.	Telecast and special videos	Member States, Intelsat/ Intersputnik	New York and other locations, 1991-1992	This project lacks needed funds; efforts are still in progress to effect its implementation.
C.4.	Exhibition	Member States	New York	Plans for the Home Planet Exhibition had to be suspended due to insufficient financial support.